GOOD GRAVEL ROADS.

FAR SUPERIOR TO THE COMMON EARTH HIGHWAY.

Information as to the Selection of Material – Preparing the Foundation – Grading and Rolling Very Important.

In connection with the building and maintenance of gravel roads the most important matter to consider is that of selecting the proper material. A small proportion of argillaceous sand, clayey, or earthy matter contained in some gravel enables it to pack readily and [illegible] under traffic or the road [illegible] seaside and river gravel, which [illegible] usually of rounded, water [illegible] pebbles, is unfit for surfacing [illegible]. The small stones of which they [illegible] composed having no angular projections or sharp edges, easily move or roll against each other and will not [illegible] together, and even when mixed [illegible] clay may turn freely, causing the [illegible] surface to be loose, like materials [illegible] sieve.

[illegible] qualities of gravel can sometimes be used for foundations, but then it becomes necessary to employ such material even for that purpose it [illegible] to mix just enough sandy or clayey loam to bind it firmly together. For the wearing surface or the top layer the pebbles should, if possible, be comparatively clean, hard, angular and [illegible] so that they will readily consolidate and will not be easily pulverized by the impact of traffic into dust and [illegible]. They should be coarse, varying in size from half an inch to an inch and one-half.

Where blue gravel or hardpan and clean bank gravel are procurable a good road may be made by mixing the two together. Pit gravel or gravel dug from the earth, as a rule, contains too much earthy matter. This may, however, be removed by sifting. For this purpose two sieves are necessary, through which the gravel should be thrown. The meshes of one sieve should be one and one-half or two inches in diameter, while the meshes of the other should be three-fourths of an inch. All pebbles which will not go through the one and one-half inch meshes should be rejected or broken so that they will go through. All material which sifts through the three-fourths inch meshes should be rejected for the road, but may be used in making side paths. The excellent road which can be built from materials prepared in this way is so far superior to the one made of the natural clayey material that the expense and trouble of sifting are many times repaid.

Some earth roads may be greatly improved by covering the surface with a layer of three or four inches of gravel, and sometimes even a thinner layer may prove of very great benefit if kept in proper repair. The subsoil of such [illegible] ought, however, to be well drained or of a light and porous nature. Roads constructed over clay soils require a layer of at least six inches of gravel. The gravel must be deep enough to prevent the weight of traffic forcing the surface material into weak places in the clay beneath, and also to prevent the surface water from percolating through and softening the clay and causing the roadway to be torn up.

Owing to a lack of knowledge regarding construction, indifference or carelessness in building or improving, roads made of gravel are often very much worse than they ought to be. Some of them are made by simply dumping the material into ruts, mudholes or butterlike depressions or on unimproved foundation and are left thus for traffic to consolidate, while others are made by covering the surface with inferior material without any attention being paid to the fundamental principles of drainage. As a result of such thoughtless and haphazard methods the road usually becomes rougher and more completely covered with holes than before.

In constructing a gravel road the roadbed should first be brought to the proper grade. Ordinarily an excavation is then made to the depth of 8 or 10 inches, varying in width with the requirements of traffic. For a farm or farming community the width need not be greater than 10 or 12 feet. A roadway which is too wide is not only useless, but the extra width is a positive damage. Any width beyond that needed for the traffic is not only a waste of money in constructing the road, but is the cause of a never ending expense in maintaining it. The surface of the roadbed should preferably have a fall from the center to the sides the same as that to be given the finished road, and should, if possible, be thoroughly rolled and consolidated until smooth and firm.

A layer, not thicker than four inches, of good gravel, such as that recommended above, should then be spread evenly over the prepared roadbed.

If a roller cannot be had, the road is thrown open to traffic until it becomes well consolidated, but it is impossible to properly consolidate materials by the movement of vehicles over the road, and if this means is pursued constant watchfulness is necessary to prevent unequal wear and to keep the surface smooth and free from ruts. The work may be hastened and facilitated by the use of a horse roller or light steam roller, and, of course, far better results can be accomplished by this means. If the gravel be too dry to consolidate easily, it should be kept moist by sprinkling. It should not, however, be made too wet, as an earthy or clayey matter in the gravel is liable to be dissolved.

As soon as the first layer has been properly consolidated a second, third and, if necessary, fourth layer, each three or four inches in thickness, is spread on and treated in the same manner, until the road is built up to the required thickness and cross section. The thickness in most cases need not be greater than 10 or 12 inches, and the fall from the center to the sides ought not to be greater than 1 foot in 20 feet, or less than 1 in 25.

VOYAGE OF THE SPRAY.

Captain Joshua Slocum's "Single Handed" Trip Around the World.

Captain Joshua Slocum begins in the September Century an account, written in the breezy style of an old sailor, of his remarkable voyage alone around the world, in which he crossed the Atlantic twice and covered in all over 45,000 miles. He built his boat near New Bedford, in Buzzards bay, and set sail in the spring of the year.

At last the time arrived to weigh anchor and get to sea. I had resolved on a voyage around the world, and as the wind on the morning of April 24, 1895, was fair, at noon I weighed anchor, set sail and filled away from Boston, where the Spray had been moored snugly all winter. The 12 o'clock whistles were blowing just as the sloop shot ahead under full sail. A short board was made up the harbor on the port tack; then, coming about, she stood seaward, with her boom well off to port, and swung past the ferries with lively heels. A photographer on the outer pier at East Boston got a picture of her as she swept by, her flag at the peak throwing its folds clear. A thrilling pulse beat high in me. My step was light on deck in the crisp air. I felt that there could be no turning back, and that I was engaging in an adventure the meaning of which I thoroughly understood. I had taken little advice from any one, for I had a right to my own opinions in matters pertaining to the sea. That the best of sailors might do worse than even I alone was borne in upon me not a league from Boston docks, where a great steamship, fully manned, officered and piloted, lay stranded and broken. This was the Venetian. She was broken completely in two over a ledge. So in the first hour of my lone voyage I had proof that the Spray could at least do better than this full handed steamship, for I was already farther on my voyage than she. "Take warning, Spray, and have a care," I uttered aloud to my bark, passing fairylike silently down the bay.

The wind freshened, and the Spray rounded Deer island light, going at the rate of seven knots. Passing it, she squared away direct for Gloucester, where she was to procure some fishermen's stores. Waves dancing joyously across Massachusetts bay met the sloop coming out, to dash themselves instantly into myriads of sparkling gems that hung about her breast at every surge. The day was perfect, the sunlight clear and strong. Every particle of water thrown into the air became a gem, and the Spray, making good her name as she dashed ahead, snatched necklace after necklace from the sea and as often threw them away. We have all seen miniature rainbows about a ship's brow, but the Spray flung out a bow of her own that day such as I have never seen before. Her good angel had embarked on the voyage; I so read it in the sea.

THE EXPRESS COMPANIES.

Something About Their Operations and the Profits They Make.

At the present time there are, in all, 16 large express companies in the United States, two in Canada and two in Mexico. Their aggregate capitalization amounts to more than $100,000,000. In round numbers, they cover 200,000 miles of railroad, steamboat and stage lines. They carry annually 100,000,000 packages of merchandise, 20,000,000 money packages and issue 7,000,000 money orders. This service requires the employment of 50,000 men at 40,000 agencies, and the use of 15,000 horses and 6,000 vehicles.

Recent arguments in favor of a government reduction of express rates has brought out a statement from the companies that excessive charges are impossible, owing to the keen competition that exists, and at the same time that the rates must be kept up on account of the necessity of employing men of high integrity and character, owing to the value of commodities passing through their hands. They also furnish the following statement calculated to show their various expenses and the narrowness of their margin of profits:

	Per cent.
Paid to railroads	40.60
Paid to employees	33.60
Paid for office rents	2.79
Paid for losses	.48
Paid for stationery and supplies	1.80
Paid for stable expenses	8.85
Paid for taxes and other expenses	5.15
Total	94.54

They make the further assertion that this profit of 5.46 per cent is to some extent due to the profitable investment of the earnings of previous years, but such a statement must be accepted with caution, for in the present day of combinations "gentlemen's agreements" frequently exist where they are least suspected. Competition no doubt still exists, but it is not destructive, and the various companies work in wonderful harmony. A customer who wishes a commission executed at a distant point is not infrequently advised to take it to a rival concern that has greater facilities for its transaction. This does not smack of a very keen rivalry, but if the great express companies have no understanding as to the division of territory in this day of trusts, they are fit subjects for admiration, if not incredulous surprise.—Ainslee's Magazine For September.

Money Found In Mail Bags.

"It seems almost incredible that in the neighborhood of $40,000 in actual cash should have been confided to letters during the last year, and harder still to credit that the most exhaustive efforts failed to find the owners of one-fourth of that amount," writes Patti Lyle Collins in The Ladies' Home Journal for September. "The envelopes which are addressed are kept on file for four years, blank ones not so long, but in either case a liberal margin of time is allowed for claimants to appear before the money is finally turned into the treasury to the credit of the postoffice department. In addition to the money contained in letters during the same period, something like $10,000 was found loose in the mails. It is officially styled 'loose money.'"

How the Beaver Builds His House.

The beaver's habit of building for himself and family a comfortable and conspicuous residence enables the hunters to take a pretty accurate census of the population, and to tell just where the animals are to be found. On our way we turned aside and photographed a beaver dam and a house. The natural history books generally picture these constructions as quite symmetrical affairs, but all I have ever seen have been rough piles of sticks and mud, and the photographs show typical beaver construction.—Frederic Irland in September Scribner's.

POINTS ABOUT MILKING.

Kindness to Cows Has a Commercial Value.

It is not a paradox to say that there are several ways of milking cows, says The English Dairy World. The best way is that which obtains the maximum quantity of milk. To this end, therefore, the dairy farmer is bound to regard the operation of milking as one of the greatest importance and one which involves certain actions, all of them simple, some of which, to the man who does not understand cows, may even appear childish. As an instance we may mention that the Normandy milkmaid is taught from her childhood always to sing softly to the cows she is milking. The object, of course, is to keep the animal in good humor, to induce her to forget that she is being milked and, sensitive creature that she is, to prevent her from keeping back her milk. Indeed, the beneficial effect of music on the flow of milk is by many thought so great that we have heard an American dairy farmer seriously say that it would pay the owner of a large herd to employ a band to discourse sweet music during milking time.

Apart, however, from hypothetical considerations, there are others which should be always carefully followed. Remembering the fact that the mammary glands are particularly active during the actual period of milking, it is of importance that the act of milking be continuous, without intermission from the beginning to the end. Gently pressing the cow's flank with his head, the milkman should firmly grasp with his hands teats which are diagonally opposite. They should be grasped sufficiently high to slightly compress the udder. The motion of each hand should then be alternately upward and downward. The milking should be slow at first, then gradually accelerated, until a quick motion has been attained which should be continued rhythmically to the end of the flow of milk.

The importance of milking to dryness cannot be too strongly impressed when it is remembered that the milk which is last drawn contains the largest proportions of butter fat.

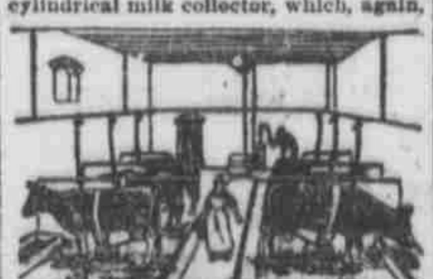
A person who is not gentle to cows should never be allowed to milk them. Nor is their sensitiveness to be forgotten. The milkman who does not walk straight up to a cow in a field, but who makes a detour to reach her, is a man who fully appreciates the timidity of the dairy cow.

The foregoing considerations relate to the quantity of milk to be obtained. As regards the milk actually yielded, the most important factor is that of cleanliness, though it is the one perhaps the least considered. The milker should always wash his hands carefully, as well as the cow's teats, before milking. It is better also to waste the first few jets of milk which issue from the udder and which may contain some deleterious bacteria than to run the risk of spoiling the amount kept by obtaining a slightly larger quantity of milk.

Mechanical Milking.

A German manufacturer has invented a new milking machine which is finding a ready sale in Europe, especially in Denmark, Switzerland and Russia, says The National Rural.

As shown by our illustration, an iron pipe about one inch in diameter is conducted through the stable and is fixed at the ceiling so that it remains about three feet above the back of the animals. Flexible shafts provided with small cocks run from this pipe to a cylindrical milk collector, which, again,



GERMAN MILKING MACHINE.

is held by a belt laid around the back of the cows. At one side there is attached a small flexible hose divided into four small arms, all provided with small cocks connected with the udder.

The first mentioned iron pipe, running all through the stable, is connected with a large cylinder fixed at the ceiling, from which a perpendicular tube runs down into a vessel filled with water. By means of a small hand pump the air is compressed in the cylinder and thus through the whole pipes.

The water when rising regulates the pressure in the pipes.

It needs only a few movements of the pump's piston to compress the air throughout the whole system.

The only thing to be done then is to open the small cocks of the pipes connected with the udder, and the milk flows into the above described milk collecting vessel.

By this apparatus a large number of cows can be milked in a few minutes. The whole process from the beginning to the end does not require more than eight minutes.

Sterilized Milk For Scours.

Sterilized milk is good for scours. Calves that receive sterilized milk are less subject to scours and recover more readily when attached. The heating of the milk seems to produce chemical changes that help to prevent scours and at the same time enables the feeder to keep the milk in good, sweet condition. Milk delivered at the creamery contains large numbers of lactic acid germs. Unless these are destroyed by sterilizing, the skimmilk will sour in a few hours. When sterilized and cooled, skimmilk may be kept sweet from 24 to 48 hours. Feeding sweet milk at one meal and sour at another is very apt to cause scours and stunt the growth of the calf. —Live Stock.

SCHOOL SANITATION.

Municipal Regulations In Various Large Cities.

The legislation of 17 representative cities deals with only nine subjects—vaccination, contagious diseases, fire, fire drills, cleanliness, ventilation, temperature and floor space. Of these cities—nine, led by Boston and Chicago, order that children not cleanly shall be sent home; eight only have rules regulating ventilation, and in seven of them this only means that teachers use care that the air be pure in the rooms. Detroit has by recent act of the legislature a law similar to that of Massachusetts. It provides that it "shall be the duty of the committee on health and ventilation to inform themselves and to advise the board from time to time in regard to all matters relating to the warming, ventilating and lighting of the schoolrooms, the sanitary conditions of the buildings and grounds and all matters relating to vaccination, contagious diseases and the general health of the pupils and teachers, recommending to the board such action as they may deem necessary."

This legislation would seem to be thorough if it was certain that such committee was efficient. Eight cities fix a standard of ventilation ranging from 65 degrees to 70 degrees, Minneapolis requiring the temperature to be kept at 70 degrees. Brooklyn alone has ruled that pupils' seats shall not face the light. Only Brooklyn and New York city legislate as to floor space. Brooklyn's legislation says: "The seats in all new buildings hereafter erected shall be placed so as to allow at least 12 square feet of floor space and 200 cubic feet of air space for each primary pupil, 14 square feet and 225 cubic feet for each grammar grade pupil below the sixth, and 18 square feet and 250 cubic feet above the fifth, and no school building shall be erected which does not provide outgo and income air flues of a sufficient size to insure a change of all air of each schoolroom from three to six times an hour.

CITY IMPROVEMENT.

Tendency of Americans Is Toward Public Parks.

It is not surprising that in the development of the higher urban life aesthetic improvement comes last. But we are a people that make history rapidly. When a single life may span the time between virgin forest or sandy plain and a city noble in size, aspect and altruistic endeavor, we may expect to find movements which are logically far apart crowded close together. An important point in the history of an American city is reached when its people have time to turn their attention from its sewers, its protection and other fundamental necessities to what is recognized as its "higher life." The commonness of the term shows how generally that point has been reached.

All things will not be done orderly and wisely in a democracy, for progress proceeds in a zigzag line. An administration dependent on the good will of taxpayers is not likely, for instance, to order the building of great parks until the demands upon the treasury for sewers, pavements and even schools have to some extent been satisfied or until the public is willing to incur such an increase in expense to gain this end. One may regret the delay from a sociological point of view, and it may largely increase the expense over what would have been possible earlier, before the land had appreciated in value, but when it comes it is far more significant. It means that the bulk of the people want parks.—Atlantic.

A MAN AND HIS TOWN.

Owes Allegiance to His Place of Residence, Not Birthplace.

The Merchants' Protective association of Pasadena, Cal., at a recent meeting, listened to a talk by Robert J. Burdette on "What a Man Owes to the Town He Lives In."

In his address Mr. Burdette maintained that a man owes more to the town he lives in than to the one he was born in, because it has been selected by himself, while the town he was born in was selected by his parents. A man should stand up for his town against all the outside world, even if he kicks about things inside it. It is a good thing for the city fathers and water directors to have a kicking spell occasionally. It is only a little family affair and does good often. He illustrated his points by several amusing anecdotes.

He spent much of his talk on Pasadena, which, he said, was in some respects the most remarkable town he had ever lived in—remarkable for its intellectuality, culture and morality. In fact, he said, Pasadena had more advantages in the intellectuality of its people than any city of which he knew.

The members showed their appreciation of Mr. Burdette's talk by making him an honorary member of the association by a rising vote.

Plants For Hedges.

While there is much difference of opinion regarding the relative merits of plants suitable for hedges, there is little doubt that among flowering plants the Japan quince (Cydonia japonica) ranks easily first. The California privet (Ligustrum ovalifolium) is a fine plant for use as a hedge and superior to anything else for the purpose where stock is not to be turned or where flowers are not especially desired—the privet flowers, of course—but as it is usually kept trimmed close most of the flowering shoots are cut off. The privet is hardy, of strong constitution and succeeds well in all sections, being especially desirable for planting near the seacoast.—Chicago Record.

Coax In Trade.

There's lots of trade right around your own doors waiting to be coaxed in, and many advertisers would do well to avoid overreaching.—Ad Sense.

How to Cure a Head Shaking Horse.

In speaking of the peculiarities of the colt Limerick, Ben Kenney told me that he cured him of the annoying habit of throwing his nose out and shaking his head by simply trimming all the long hairs out of his nostrils says a writer in the Horse Review. The wind blew the hairs back in his nose and tickled him so that he couldn't keep his head still. Kenney said that he believed long hairs in the nose were just what caused so many horses to shake their heads when trotting against the wind.

Pecos Valley & Northeastern Railway Co.

Central Time.

North Bound.		South Bound.
Lv. 3:30 p m	Pecos	Ar. 11:05 a m
6:54	Malaga	7:44
Ar. 7:15	Carlsbad	Lv. 7:00 am
Lv. 6:20 a m		Ar. 7:30 pm
7:10	McMillan	6:28
8:46	Hagerman	5:05
9:50	Roswell	3:45 p m
2:55 p. m.	Portales	11:30
4:27	Bovina	9:18
9:00	Amarillo	Lv. 5:25 a m

Train No. 1 leaves Pecos, Texas, daily at 3:30 p. m., arriving at Carlsbad at 7:15 p. m., laying over night. Leaves Carlsbad at 6:20 a. m., arrives at Roswell at 9:50 a. m., and at Amarillo at 9:00 p. m., connecting with the A. T. & S. F., and the Ft. W. & D. Rys.

Train No. 2 leaves Amarillo daily at 5:25 a. m., arrives at Roswell at 3:45 p. m., and at Carlsbad at 7:30 p. m., laying over night, leaving Carlsbad at 7:00 a. m., arriving at Pecos at 11:05 a. m., connecting with the T. & P. Ry.

Stages for Lincoln, White Oaks and Nogal N. M., leave Roswell daily except Sunday at 7:00 a. m.

For low rates, for information regarding the resources of this valley, price of lands, etc., address:

D. H. NICHOLS,
General Manager.

DON D. DONAHUE,
Genl. Frt. & Pass. Agt.
Carlsbad N. M.

El Paso & Northeastern Railroad.

El Paso & Northeastern Railway.

Leaves Alamogordo 3:20 p. m.
Arrives El Paso 7:15 p. m.
Leaves El Paso 10:30 a. m.
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Making connection at El Paso for the east, west and all points in Mexico.

Connecting at Alamogordo with the stage line for the

White Oaks Country.

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A. S. GREIG,
Gen Supt & Tkt & Pass Agt
H. ALEXANDER, A. G. P. A.

CHURCH DIRECTORY.

ST. EDWARD'S (CATHOLIC): Services every Sunday at 9:30 a. m. All are cordially invited.
P. COONEY, Pastor.

M. E. CHURCH, SOUTH: Regular services Sunday at 11 a. m. and 7 p. m.; Sunday school at 10 a. m.; Epworth League at 3 p. m. Prayer meeting every Wednesday evening at 7 o'clock.
J. E. SAWDERS, Pastor.

Eddy Lodge No. 21, K. of P.

Meets every Thursday evening at 7:30 o'clock. All visitors are welcome.
JOHN BOLTON, C. C.
K. R. & S.

MASONIC.—Eddy Lodge No. 21, A. F. & A. M.—Meets in regular communication at 7:30 p. m., 3rd Saturday of each month. Visiting brethren invited to attend.
J. R. FRIEDLMAN, W. M.
A. N. PRATT, Secy.

I. O. O. F. Lodge No. 11 meets every Friday evening in Masonic hall. Visiting brothers in good standing cordially welcome.
C. H. WRIGHT, N. G.
JNO. S. McEWAN, Secy.

Eddy Camp Woodmen of the World. Meets in the City Hall the second and fourth Tuesday nights of each month.
D. B. SUTHERLAND, C. C.
BERT ROBERTSON, Clk.